REMARKS:

1. Introduction

Upon entry of the present amendment, claims 1 and 5-8 are pending in this application, all of which have been amended. No new matter is presented. In view of the amendments and the following remarks, reconsideration and allowance of all the pending claims are respectfully requested.

2. Rejection under 35 U.S.C. 112, first paragraph

All of the claims were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The Examiner notes that claim 1 specified that a flow rate of the fluid passing through the flow path becomes smaller according to a movement of the valve body and states that it is unclear as to how the flow rate becomes smaller as the area of the flow path becomes smaller. Applicant respectfully submits that claim 1 has been amended to address the Examiner's concerns.

3. Rejection under 35 U.S.C. 112, second paragraph

Claims 1, 2 and 5-8 were rejected under 35 U.S.C. 112, second paragraph, as containing limitations that appear to be a translation and are unclear with regard to the scope of the claims, namely, the limitation "flown" in claims 1 and 5, "owing to entering" at lines 13 and 14 of claim 1 and "its" at several locations in claim 1. Applicant respectfully submits that the claims have been amended to address he Examiner's concerns.

4. Rejection under 35 U.S.C. 102(b)

Claims 1, 2 and 6-8 were rejected under 35 U.S.C. 102(b) as being anticipated by Lee (U.S. publication 20030177606). Claim 2 has been cancelled. Applicant respectfully requests reconsideration and withdrawal of this rejection of claims 1 and 6-8 for at least the following reasons:

Independent claim 1 is currently amended to define the rotary damper of the present invention in a manner which clearly distinguishes over the teachings of Lee. As amended, claim 1 defines the rotary damper as including a valve body which is placed in a valve chamber of a valve mechanism. The damper is structured and arranged to apply fluid pressure behind the valve body which increases in proportion to an applied load. The valve body is structured and arranged to move forwardly into an operating chamber of the valve mechanism upon receiving the pressure of the fluid so applied behind the valve body and a first spring is provided which resists the forward movement of the valve body so that the valve body moves according to the applied fluid pressure. A fluid flow path is formed between an inner peripheral surface of a peripheral wall of the operating chamber and an outer peripheral surface of the valve body when the valve body moves forwardly into the operating chamber. The damper is also structured and arranged such that the fluid moves only though the flow path when moving from the valve chamber to the operating chamber and the length of the flow path becomes longer as the valve body moves forwardly further into the operating chamber.

(1) Lee (US 2003/0177606 A1) discloses a valve body (115, 20) placed in a valve chamber. Reference is made to the following Figures A and B corresponding to Figures 2 and 4 of Lee, respectively.

Figure A

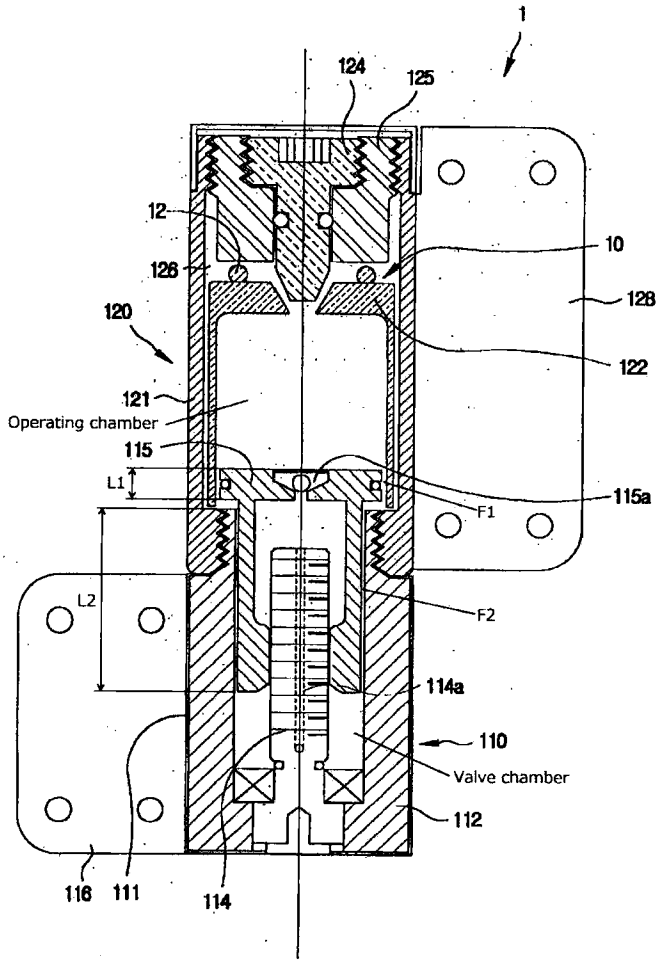
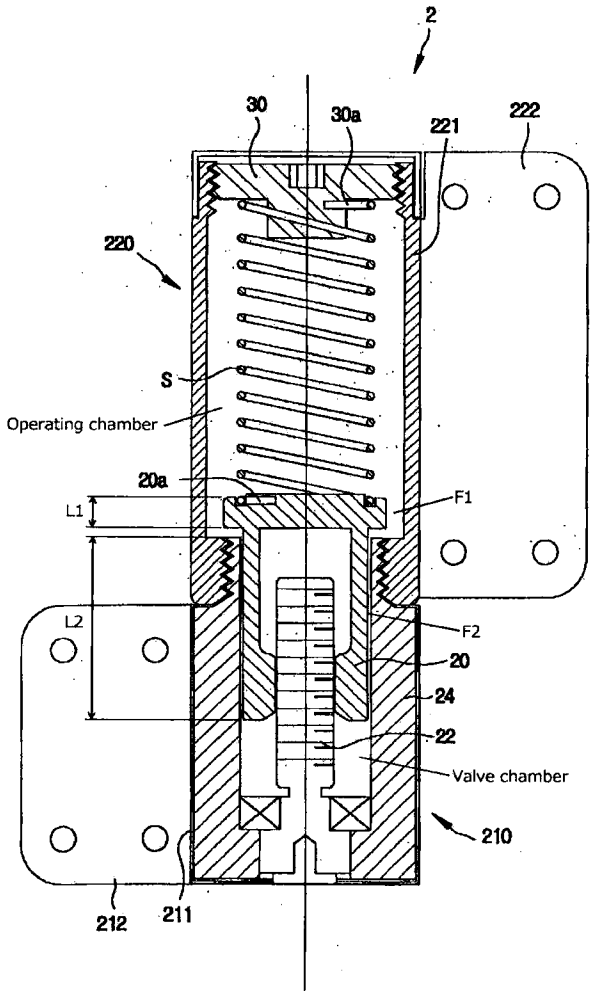


Figure B



However, the valve body (115, 20) of Lee moves to an operating chamber according to an angle of rotation of a rotary shaft (114, 22). Refer to paragraphs [0025] and [0032] of Lee. Therefore, the forward movement of valve body (115, 20) is increased in proportion to the angle of rotation of the rotary shaft (114, 22) independently of a load. As a result, a valve mechanism of Lee can only generate a constant braking force in proportion to the angle of rotation of a rotary shaft (114, 22) even if a rotating speed of the rotary shaft (114, 22) is fast due to an increase in the load or is slow due to a decrease in the load.

In contrast, claim 1, as amended, defines the damper of the present invention to be structured and arranged to apply a fluid pressure behind a valve body which increases in proportion to an applied load. The valve body of the present invention is structured and arranged to move forwardly into the operating chamber upon receiving the pressure of the fluid. Therefore, the forward movement of the valve body is increased in proportion to a load independently of an angle of rotation of a rotary shaft. As a result, a valve mechanism of a damper according to the present invention can generate a braking force in proportion to the load even if an angle of rotation of a rotary shaft is large or is small.

Accordingly, Lee does not disclose a damper which is structured and arranged to apply a fluid pressure behind a valve body and/or a valve body structured and arranged to move into an operating chamber upon receiving a pressure of the fluid which increases in proportion to a load.

(2) Lee also discloses that a first spring (S) is placed in an operating chamber and is capable of giving a resistance to the forward movement of a valve body (20). Refer to the above Figure B.

However, the first spring (S) is not structured and arranged to control the movement of the valve body (20) according to the pressure of the fluid because the valve body (20) moves according to an angle of rotation of a rotary shaft (114, 22) independently of the resistance of the first spring (S).

In contrast, a first spring of the present invention is structured and arranged to provide a resistance to the forward movement of the valve body so that the valve body moves according to the pressure of the fluid. In other words, the first spring of the present invention is structured to control the movement of the valve body according to the pressure of the fluid. As a result, a valve mechanism of the present invention can control the valve body so that the valve body enters into an operation chamber deeply when the pressure of the fluid is large even if an angle of rotation of a rotary shaft is small. The valve mechanism of the damper of the present invention also can control the valve body so that the valve body enters into an operate chamber shallowly when the pressure of the fluid is small even if an angle of rotation of a rotary shaft is large.

Accordingly, Lee does not disclose that a first spring is structured and arranged to provide resistance to the forward movement of the valve body so that the valve body moves according to the pressure of the fluid.

(3) Lee also discloses a flow path (F1) formed between an inner peripheral surface of a peripheral wall of an operating chamber and an outer peripheral surface of a valve body. Refer to the above Figures A and B. However, a length (L1) of the flow path (F1) is not changed even if the valve body moves. Therefore, a resistance which occurs by passing of fluid is not changed.

Lee also discloses a flow path (F2) formed between an inner peripheral surface of a peripheral wall of a valve chamber and an outer peripheral surface of a valve body. Refer to the above Figures A and B. However, the length (L2) of the flow path (F2) becomes shorter according to the forward movement of the valve body. Therefore, a resistance which occurs by passing of fluid becomes smaller according to the forward movement of the valve body because the resistance of fluid is increased in proportion to the length of the flow pass which obstruct the free flow of fluid.

In contrast, a length of the flow path of the present invention becomes longer as the valve body moves forwardly. Therefore, a resistance which occurs by passing of fluid becomes larger according to the forward movement of the valve body.

Accordingly, Lee does not disclose that a length of the flow path becomes longer as the valve body moves forwardly.

In view of the foregoing, it is respectfully submitted that claim 1 patentably defines over Lee and should now stand allowable.

Claims 6-8 all depend from claim 1 and, as such, include the various limitations thereof. Accordingly, for the same reasons as advanced above relative to claim 1, these claims are also deemed to be allowable.

Moreover, claims 6, 7, 8/6 and 8/7 further define the rotary damper of claim 1 as including a pushing member which pushes the fluid by rotational motion and a partitioning member which partitions a space into which fluid is charged. In the illustrated embodiment, the

claimed pushing member comprises the vanes 3 while the claimed partitioning member comprise the casing including division walls 4. The Examiner takes the position that "any structure inside the cylinder of Lee can be interpreted as the pushing member of or a partitioning member that pushes fluid by rotational motion as that is the general nature of the rotary damper (col. 4, line 33/34)."

Initially, it is not seen to where the Examiner has reference in Lee at "col. 4, line 33/34." Moreover, claim 1, from which claims 6, 7, 8/6 and 8/7 depend, has been amended to define the "fluid" ("the damper is structured and arrange to apply fluid pressure behind the valve body which increases in proportion to the load"). Lee is manifestly devoid of any teaching or suggestion of such a fluid pushing or partitioning member, so that for this reason, in addition to the reasons advanced above relative to claim 1, claims 6, 7, 8/6 and 8/7 should now stand allowable.

5. Rejection under 35 U.S.C. 103(a)

Claim 5 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Park (20040250377). However, neither Lee nor Park, taken alone or in combination, teach or suggest a rotary damper as recited in claim 1 from which claim 5 depends so that for this reason, in addition to other reasons, claim 5 should now stand allowable.

Conclusion

Having fully responded to all objections and rejections set forth in the outstanding Office Action, Applicant respectfully submits that the application is in condition for allowance and Notice to this effect is requested. Additional characteristics or arguments may exist that distinguish the claims over the prior art cited by the Examiner, and Applicant respectfully reserves the right to present these in the future, should they be necessary.

Authorization:

The Commissioner is authorized to charge any additional fees, including fees for any extensions of time, associated with this filing, and credit any overpayment, to Deposit Account No. 50-3111. If an extension of time is required, this should be considered a petition therefor. If the fees associated with the Request for Continued Examination are filed herewith, this should be considered a petition therefor.

Respectfully submitted,

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